Appendix A

Quality Management Plan

for

Engineering and Design

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APPROVED BY:

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Changes to this document require the concurrence of the ED Branch Chiefs and approval by the Chief, ED, and shall only be made following the procedures described herein.

CONTENTS

Appendices:

1.0 PURPOSE

The purpose of this Quality Management Plan (QMP) is to establish the foundation of general policies and principles to be followed by Engineering Division (ED) in the continuing endeavor to improve the level of quality delivered to our customers and to ourselves. It is the intent of ED to eventually merge the ED QMP with the ED ISO 9001 Quality Manual, in accordance with stated HQUSACE objectives and in concert with HQUSACE and CESPD policy.

2.0 SCOPE

This QMP applies to all ED QMPs and shall be observed by every member and every organizational element of ED.

This QMP applies to all elements within ED in the Sacramento District for military, civil works, environmental, work for other DOD agencies (WFO), and support for other (SFO) projects.

3.0 REFERENCES

a. ED ISO 9001 Quality Manual and Engineering Quality Procedures

b. AR 25-400-2, The Modern Army Record Keeping System (MARKS)

c. AR 5-1, Army Management Philosophy

d. EM 1110-1-1807, Computer-Aided Design and Drafting

e. ER 5-1-11, Program and Project Management

f. ER 385-1-92, Safety and Occupational Health Document Requirements Hazardous Waste Site Remedial Act.

g. ER 415-1-11, Biddability, Constructibility, Operability and Environmental (BCOE) Review

h. ER 415-3-11, Post Completion Inspection and Design Criteria Feedback Inspection

i. ER 415-345-38, Transfer and Warranties

j. ER 415-345-42, Costs, Cost Estimating and Reserve for Contingencies

k. ER 715-1-8, Architect-Engineering Contract Administration Support System

l. ER 715-1-10, Architect-Engineer Responsibility Management Program

m. ER 715-1-15, Time Standards for the Architect-Engineer Acquisition Process

n. ER 1110-1-12, Quality Management

o. ER 1110-3-113, Dept of Army Facilities Standardization Program

p. ER 1110-1-263, Chemical Quality Management for Hazardous Waste Remedial Activities

q. ER 1110-1-1300, Cost Engineering Policy and General Requirements

r. ER 1110-2-109, Hydroelectric Design Center

s. ER 1110-2-1150, Engineering and Design for Civil Works Projects

t. ER 1110-2-1200, Drawings and Specifications

u. ER 1110-3-109, Corps Wide Centers of Expertise

v. ER 1110-345-100, Design Policy for Military Construction

w. ER 1110-345-700, Design Analyses

x. ER 1110-345-710, Drawings

y. ER 1110-345-720, Construction Specifications

z. ER 1180-1-6, Construction Specifications

aa. ETL 1110-3-447, Engineer of Record and Design Responsibilities

bb. Architectural and Engineer Instructions (AEI)

cc. "Leadership for Total Army Quality" Concept Plan, Feb. 1993, OCSA, HQDA, (DACS-DMM)

dd. A-E Guide Volume 1, "Design Guidance"

ee. A-E Guide Volume 2, "MCACES Guidance"

ff. A-E Guide Volume 3, "Specification Guidance"

4.0 DEFINITIONS

Customer - The owner, client, user, project manager (PM) or beneficiary of a Sacramento district service or product. It is recognized that there are also internal customers within the District for our engineering and design products and services, including the PM and Construction-Operations Division among others.

Design - The process of (1) developing the analysis that defines the required technical systems (e.g., geotechnical, hydraulic, architectural, structural, mechanical, electrical) which will be utilized, (2) producing the technical portions of the construction contract documents (i.e. drawings, specifications, design analysis, and construction cost estimate.)

Project Management Plan (PMP) - The detailed, specific plan, used to manage and control the delivery of a project from its inception to completion. See ER 5-1-11 for a full definition of PMP.

Project Manager (PM) - The PM is the leader of the project team and has the responsibility for the development of the PMP.

Project Engineer (PE) - The PE serves the function of a PM for projects designed by Sacramento District and the PM is a member of another district, such as SPL. The PE is typically responsible for a single phase of a complete project such as the design.

Process Action Teams (PAT) - Process Action Teams are composed of those who are involved in the processes being investigated. The members of a PAT are often chosen by their respective managers on the Quality Management Boards.

Quality - The word quality has three major meanings and is usually defined by the customer: (1) those product features which respond to customer needs, (2) freedom from deficiencies, and (3) conform to applicable laws, polices, and technical criteria.

Resource Manager – Branch/Section Chief who provides (selects, trains, supervises) team members to the Project Delivery Team.

5.0 POLICY

The policy of the Sacramento District ED is to consistently provide high caliber engineering and designing services and products to meet our customers' expectations on quality, schedule, and budget. The direction offered in this document will ensure that we achieve this goal.

ED has accountability and responsibility for all technical products produced by ED, whether designed by in-house or A-E forces. ED fully supports fully accountability and responsibility defined in CECW-EP/CEMP-EC Memorandum, SUBJECT: Accountability and Responsibility for Technical Products.

6.0 QUALITY MANAGEMENT

Customer Centered Leadership - Every action that is undertaken within ED should be questioned as to how it will directly or indirectly affect the customer. All aspects are to be analyzed with respect to meeting budgets, schedules, functionality, and compliance with governing criteria. This form of customer centered leadership will be documented in the PMP and agreed upon by all parties, customer, technical staff (A-E or In-House), and management from all Branches or Divisions that have a role in the process.

Continuous Improvement - Individuals within ED will strive for continual improvement in every aspect of their work. This will be accomplished by the embrace of Total Army Quality (TAQ) philosophy. Process improvement can occur either through individual input or through involvement in PATs. Individual suggestions that can save the Government money can be formally submitted through the Suggestion Coordinator in the District□s Resource Management Office.

Empowerment - People should be given as much authority as is commensurate with their position and realm of responsibility. Supervisors are to encourage a proactive, team-spirited, work environment through actual work examples and formalized training in Team Concepts.

The responsibility for the coordination of planning, design and construction shall be the responsibility of the entire project team. Although the Quality Control Plan (QCP) will identify by name the specific team members and their primary functions, each member will play a vital role throughout the life of the project. The PM will function as the Team Leader, however, in the absence of this individual, the Project Engineer or any other Team Member who is available, shall assist the customer or other Corps staff who may have a problem or a question.

6.1 Project Initiation and Coordination

The PM/PE is responsible for ensuring that all members of the design team understand the scope of the project, the customer requirements, technical requirements, schedule, and budget requirements for project development. Methods ensuring that this occurs are documented in the Branch QMP.

6.1.1 Customer Requirements.

The PM/PE shall be responsible for the overall execution of a design project to meet customer requirements. As such, the PM/PE shall be the single POC for: the customer on technical issues; the PM on programmatic issues; Program Analyst (PPMD) for financial support; and the design team.

6.1.2 Technical Requirements.

This function addresses a technical suitability/appropriateness overview of major system selection or design direction decisions for each discipline and the collective team involved in a design effort. Technical QA activities

shall normally be accomplished near the end of each major design phase, allowing sufficient time for any required adjustments prior to submitting design documents to the PM/PE for formal review.

6.1.3 Scope of Work.

Prior to writing the SOW, the PM/PE, and CT representative shall agree on an acquisition plan, which might have already been addressed in the District's Advanced Acquisition Planning process. The acquisition plan shall be reflected in the SOW, Total Project Budget and Schedule.

As a result of the Predesign Conference, the PM/PE shall develop a detailed SOW for the project that defines the deliverables and services to be provided by the design team to meet the customer's expectations and requirements. Project engineering budget and schedule data shall be based on the requirements specified in the SOW. The final SOW shall reflect the services that can be obtained within the Headquarters, U.S. Army Corps of Engineers (HQUSACE) or local sponsor design target and the approved budget.

6.1.4 Schedule.

All project schedules shall be established and maintained in Microsoft Project format based on the design requirements specified in the SOW. A Network Analysis System (NAS) for developing project activities, schedules, and budgets in PROMIS Work Breakdown Structure (WBS) format shall be used, which provides a systematic outline for various requirements during the design phase. Schedules shall be updated when changes occur, but as a minimum once a month (in accordance with monthly Line Item Review requirements) to ensure that critical milestones and forecast dates are met.

6.1.5 Budget.

The PM/PE shall be responsible for managing the project engineering budget within the target budget. The PM/PE shall coordinate and negotiate effort and costs with all District engineering elements, and as applicable, A-E services associated with the production of the design package. This information shall be incorporated by the PM/PE into a Total Project Budget that reflects the total cost for all District engineering efforts associated with the development, advertisement, and award of a construction project. The Resource Manager shall negotiate and agree on the project engineering budget with the PM before initiation of the design effort.

6.1.6 Designer Selection.

The decision of whether to use in-house or A-E design services for a MCP project is based on a corporate decision made by PPMD, the ED technical management Branch and In-House ED Design elements.

6.1.7 Scopes of Services.

The PM/PE shall provide to the A-E and/or I-H design teams the following design support data within a period that will support the established project design schedule:

1) **A-E Design Services.** The PM/PE shall ensure that a contract is issued to the A-E for work and services. The contract reflects the agreed upon project design schedule and fee, and references the project SOW for required design services.

2) **I-H Design Services.** The PM/PE shall issue a Funded Work Item (FWI) to each Section to initiate I-H design services for a specific project effort. The FWI is the execution contract between the PM/PE and the I-H design team.

The FWI reflects the agreed upon project design schedule and budget, and references the project SOW for required design services. At no time shall I-H personnel proceed with work without receipt of the FWI from the PM/PE.

3) **Surveys.** The PM/PE shall issue a FWI to the Geology and Mapping Section of Geotechnical Branch to acquire and provide the design team with all topographic data necessary to support project design. The scope and requirements of the survey effort shall be coordinated with the design team.

4) **Explorations.** The PM/PE shall issue a FWI to the Geology and Mapping Section of Geotechnical Branch. The Geology Section will acquire and provide the design team with all explorations, lab testing, and boring logs necessary to support project design. The scope and requirements of exploration effort shall be coordinated with the design team.

5) **Geotech Report.** The PM/PE shall issue a FWI to the Soil Design Section of Geotechnical Branch. The Soil Design Section will develop and provide the design team with preliminary and final Geotech Reports that address specific requirements of the site and project.

6) **Material Report.** The PM/PE shall issue a FWI to the Soil Design Section of Geotechnical Branch. The Soil Design Section will develop and provide the design team with preliminary and final Material Reports that address specific requirements for pavements and special projects.

7) **Environmental.** The PM/PE shall issue a FWI to Environmental Engineering Branch sections to develop and provide the design team with asbestos, lead-based paint, and other Hazardous, Toxic, and Radioactive Waste (HTRW) contaminant survey data as necessary. Environmental Engineering Branch representatives shall be invited to Predesign and follow-on review conferences and assist the PM/PE in requirement definition, as applicable.

8) **Construction Quality Assurance.** The PM/PE shall issue a FWI to the Construction-Operations Division BCOE sections (SPL/SPK). The Construction-Operations Division (SPL/SPK) will provide BCOE review comments to the design team that address specific requirements of the site and project.

9) **Design Verification.** The PM/PE shall issue a FWI to the by Section of Military Design Branch. The ET&S Section will provide ED-M Independent Review comments and BCOE certification to the design team that addresses specific requirements of the site and project.

10) **Specifications.** The PM/PE shall issue a FWI to the ET&S Section of Military Design Branch. The ET&S Section will provide the front-end and Electronic Bid Set to CT.

11) **Cost Engineering Branch.** The PM/PE shall issue a FWI to the Cost Engineering Branch. The Cost Engineering Branch will provide the preliminary and final government estimates as requested by the PM/PE.

6.1.8 Quality Plans

6.1.8.1 Quality Management Plans (QMP) for Branches

The purpose of the QMP is to ensure that all work meets customer expectations and is executed and delivered on time and within budget. Therefore, a QMP shall be prepared for each branch in ED to include Civil Design, Cost Engineering, Value Engineering, Environmental, Geotechnical, and Military Design. These plans are to be in compliance with the regulations and documents referenced herein. All new plans or revisions will be subject to the approval of the Chief of ED.

6.1.8.2 Quality Control Plans (QCP).

The purpose of the QCP is to ensure that all engineering products or services that leave the District, whether developed using in-house forces or an architect-engineer (A-E), shall be developed in accordance with the QCP. These individual plans are to be approved by the Chief of the Branch from which the work will originate. The plans shall be written by the PM/PE with input from the Project Team. The level of project complexity (either technical, political, or both) will dictate the detail of each plan. As a minimum, however, all plans are to include a schedule of work to be accomplished, a budget, points of contact and their respective lines of authority/coordination, and a brief discussion on plan execution with contingency measures when appropriate. QCPs written by A-E firms shall be submitted with their fee proposal, unless the project is highly complex and would require more time for development. In this event, the A-E will be allowed to submit a generic plan with his fee followed by a completely detailed plan early in the first phase of work.

6.1.8.3 Quality Assurance Plan (QAP).

A QAP shall be prepared for every engineering product or service developed by architect-engineer (A-E) under contract. The PM/PE has the responsibility to review, discuss and approve for transmission through proper channels to SPD for final approval the QAP/QCP for each project with the principal of each design team. The PM/PE shall have a system in place to ensure himself/herself that the QAP/QCP is being implemented and followed through each phase of the design process. These activities may include phone calls to the designer to verify scheduled QC functions, design deliverables, and for visits to the designer's office, and/or requesting copies of the designer's QC activity worksheets. The QAP shall address the above activities and verify that the QCP has been carried out.

6.2 Design Verification

All projects will be verified according to the requirements stipulated in the QMP attached within. The level and type of review will vary depending on the design agent, the level of complexity, and the requirements outlined in ER 1110-2-1150 and ER 1110-2-1200 for Civil Design Projects, and ER 1110-345-100 for Military Projects.

6.2.1 Peer Review/Checking.

All projects shall be appropriately checked. Independent spot-checking and review of each designer's assumptions, analyses, and calculations shall be performed throughout the design process. This effort shall be conducted by journeyman or senior personnel within the same technical discipline section who are not directly involved with the development of the project design being reviewed.

The design team leader shall chair regular (bi-weekly is target frequency) design team coordination meetings throughout the design period. The purpose of these meetings is to discuss evolving design requirements and changes, stimulate interdisciplinary communication and design compatibility. These meetings also generally serve as a forum to stimulate individual designers to function as an integrated design team and enhance the collective quality of the design package.

6.2.2 Senior Staff Overview.

Technical discipline or selected senior personnel shall perform an experience-based suitability review of major/critical technical decisions, directions, and system selections embodied in their portion of the project design. This review shall be performed prior to the individual design team members releasing their portion of the design effort to the design team leader. The technical discipline shall be responsible for insuring that their staffs are trained, competent, and suitably overviewed to provide a high level of technical competence for their disciplines' contribution to each design team.

6.2.3 Seamless Review.

Design Team members will consult with their Independent Technical Review counterparts at appropriate points throughout the effort to discuss major assumptions and functional decisions, analytical approaches, and significant calculations to preclude significant comments from occurring that could adversely impact project schedules and costs. The conclusions/agreements reached should be documented and copies retained by each participant.

6.2.4 Interdisciplinary Team Coordination.

A detailed interdisciplinary coordination review shall be conducted by the full design team after the Senior Staff Overviews and prior to submission of the total design package to the PM/PE. During this review, individual designers shall check for discrepancies, within their work and between their work and the work prepared by other design team members. The goal is to eliminate flaws and conflicts within the plans, the specifications, and between the plans and specifications. The design team will be responsible for developing a well integrated and technically sound design that meets the customer's requirements according to governing criteria and regulations.

6.2.5 Independent Technical Review.

The review process, the level of reviews and agencies responsibilities will be addressed as early as the Predesign conference. In coordination with the I-H review team (differing in membership from design team members), the PM/PE shall establish the review level for each project. This will be reflected in the NAS schedule and the established project design budget. GS-13 Technical Specialists shall be included as members of ITR teams, depending on their availability and the applicability of the type of project under review. All independent technical reviews shall be accomplished using the Automated Review Management System (ARMS).

6.2.6 CTX/MCX Review.

Mandatory Centers of Expertise shall be contacted as appropriate for their external review services. The QAP shall reflect this requirement providing appropriate effort and funding for any MCX review.

6.2.7 Certification.

Chief of ED shall certify that the quality control process for each design has been completed and that all identified ITR technical issues have been resolved. The PM/PE shall resolve all ITR technical comments and file the signed QC certificate (see CESPD R 11101-8, Appendix G, for a sample).

6.2.8 BCOE Review.

BCOE reviews are required in accordance with ER 415-1-11 for all design products, A-E or I-H. BCOE and functional reviews of project design documents shall be conducted in ARMS by Construction-Operations Division personnel and the project customer(s), respectively, following completion of each major stage of design. Designer choice and editorial type comments shall be discouraged. The PM/PE shall arbitrate any unresolved comments between the author(s) and design team. As required by ER 415-1-11, Engineering and Construction-Operations Divisions shall provide formal, written certification that all appropriate BCOE comments have been incorporated in the design documents prior to bid opening and award of the construction contract.

6.2.9 Value Engineering (VE).

VE shall be conducted on all projects that have an estimated construction cost of $2 million or more and are funded by the customer. Additionally, the use of Value Engineering Teams for facilitating PATs is also highly encouraged.

7.0 CORRECTIVE AND PREVENTIVE ACTIONS

7.1 Lessons Learned Program

A formalized Lessons Learned System for Military/Civil design and HTRW shall be coordinated by the Criteria Management Unit (CMU) and made available to all designers via the Criteria Bulletin Board. The coordinator shall be responsible for receiving proposed additions to the Lessons Learned database and maintaining the database current. The CMU will also be responsible for monitoring the approval process through problem resolution for each Engineering Form 3078 that is prepared and submitted when a "Lessons Learned" issue requires a solution or correction in the design criteria.

7.2 Criteria Management

Design deficiencies, improvements, and field changes caused by missing, incomplete, or erroneous design guidance/criteria shall be documented, with corrective solutions on Engineering Form 3078. The Criteria Management Unit is responsible for receiving these forms from individuals and coordinating all supporting documentation prior to sending them to SPD and HQUSACE for review.

7.3 Designer Performance Evaluation

A-E performance evaluations shall be conducted in accordance with HQUSACE guidance and prepared in a timely manner. Interim evaluations shall be provided when the A-E is not performing at the level of quality required. The interim evaluation, in some cases, is best handled by a written evaluation as well as a face to face meeting between the PM/PE and the A-E firm□s design principle. A-E performance evaluations, conducted at the end of the construction phase, are to be reviewed by the PM/PE and the Chief of ED prior to entering into the Architect-Engineer Contract Administration Support System (ACASS). This will allow the PM/PE to note any major problems (for Lessons Learned) that occurred during the construction phase due to the A-E's design.

8.0 DESIGN QUALITY TOOLS

ED will continue to use proven design quality tools and to strive for developing and/or implementing new design quality tools. Some of the Design Quality Tools that are to continue being used include:

8.1 A-E Guides

SPK maintains separate A-E Guides for Army and Air Force Projects that contain general instructions on the preparation and organization of construction contract documents, design standards and criteria, technical guidance, guide specifications, and cost estimates, applicable to each MILCON design effort. These guides define the design submittal requirements for various design phases and the required design quality control plan. These shall be discussed and reviewed by the PM/PE with the design team. Specific additional project requirements shall be defined in the detailed project SOW. The A-E Guides shall be updated regularly by Military Design Branch personnel in conjunction with Cost Engineering Branch.

8.2 CADD/GIS

The application of CADD and related technology has positively affected every phase of the design process. This technology has proven its ability to reduce cost and shorten design schedules by increasing the productivity and capability of design personnel, while maintaining or enhancing the quality of projects. Sacramento District I-H

design efforts are currently 100% automated utilizing integrated CADD systems. Both AutoCAD and Intergraph CADD systems are used, depending on customer need. A variety of other technical analyses and design computer packages are used depending on project requirements and the technical discipline involved. All elements are fully networked, and Internet resources are used as appropriate. Standard details, criteria and specifications are fully automated and interfaced with all design elements. An automation committee is used to advise ED staff on automation issues.

8.3 CMU/Technical Publications

Engineering and Design Criteria Management - The Criteria Management Unit (CMU) in Military Design Branch shall be responsible for maintaining design criteria for Military, Civil, and HTRW programs for ED, A-E Firms and Customers. The CMU ensures the latest guidance and applicable criteria are readily available to all A-E and District personnel. Most design information is available to designers electronically from the Criteria Bulletin Board System (CBBS). Much of this data is updated quarterly from the Construction Criteria Base (CCB). The CCB and other CD-BASED criteria are also immediately available to I-H designers on the Local Area Network (LAN). Accordingly, all I-H design team personnel shall use the automated guidance and criteria available through the LAN during the performance of each project design effort. Designers shall check the USACE Homepage to insure the criteria being used is the latest edition available.

Engineering Division Memorandums (EDM) and Branch Memorandums - ED will continue to update and write EDMs. These documents will supplement the ED QMP. The purpose of these memorandums is to clarify implementation of new regulations or to clarify internal administrative policies. Each Branch may also supplement its QMP, as needed, with its own internal Branch Memorandums. These memorandums will be submitted to ED for review to ensure that the guidelines established within the ED QMP are maintained.

8.4 Specifications

The CEGS and other industry recognized standard specifications shall be used for preparing project specifications to the maximum practicable extent. Requirements about using guide specifications for the preparation of military project specifications contained in ER 1110-345-720 shall be followed. Design efforts shall use only the latest electronic versions of the CEGS that are updated quarterly by CCB. The HQUSACE Homepage shall be checked prior to specification preparation to see if a more recent version of the guide specification is available.

Project specifications are an important and significant component of a final design package. SPECSINTACT is a fully integrated, automated specification processing system that accurately and efficiently prepares project specifications. SPECSINTACT shall be used for the production of specifications for military projects.

8.5 Automated Review Management System (ARMS)

SPK is the home of the Corps of Engineers ARMS Technical Center of Expertise (TCX). SPK personnel are familiar with ARMS capabilities and procedures. All MILCON reviews shall be performed using ARMS. Civil Works reviews shall be performed using ARMS to the maximum extent possible. HTRW in-house design personnel shall utilize ARMS during the development of HTRW designs, and PM/PEs and technical reviewers shall utilize the system to the maximum extent possible for all A-E contracted HTRW work.

8.6 Standard Designs/Scopes of Work

The Department of the Army Facilities Standardization Program is developing standard designs in definitive design drawings. This allows each Army standard design package to be adapted to a specific installation's architectural

theme and requirements. These standard designs are mandatory in the Army for planning, programming, design, and construction of the facility types for which they were developed. Standard designs are listed in EP 1110-345-2. To the maximum practicable extent, standard designs shall be used in the production of MILCON project design packages. Army installations may initiate waivers to those standards through their MAJCOM to the Office of the Assistant Chief of Staff for Installation Management for approval.

Standard HTRW Scopes of Work (SOW) are used whenever possible to assist in maintaining consistent quality. In addition, HTRW SOW outlines from draft EM 200-1-2 and ETL 1110-1-154 are utilized as checklists to insure all necessary topics are included in the SOW.

8.7 MCACES

MCACES is the Corps automated cost estimating tool that can be used in the programming, planning, design and construction process (i.e., throughout the entire project delivery process). MCACES is fully implemented and operating within SPK. Detailed cost estimates to support Civil Works and Military design projects shall be developed using MCACES. Detailed cost estimates for the majority of HTRW projects shall be developed using MCACES. Certain WFO and SFO customer's projects, when requested by the customer, may be estimated via other appropriate methods such as the Air Force RACER cost estimating program.

8.8 Checklists

Quality control checklists can be helpful to PEs, designers, and reviewers to ensure that all appropriate design considerations are systematically addressed. Once developed, checklists shall be continually revised as dictated by changing times and experience, but must never become a substitute for professional design effort. Checklists are not intended to be comprehensive, and should be modified to fit specific requirements of each technical discipline and management task. Quality control checklists may be developed and used at various phases of the design process by each PM/PE and technical discipline at their discretion.

ER 1101-1-12 and ER 110-2-1150 contain checklists that can be helpful to designers and reviewers. Checklists are also found in the Automated Lessons Learned database. Checklist will be used to the maximum extent possible to insure all appropriate design considerations are systematically addressed.

The HTRW checklist in ER 1110-1-12 is used after the technical reviewer has completed technical review to insure basic items are not overlooked.

8.9 CTX/MCX's

USACE centers of expertise will be consulted and utilized for a wide variety of specialized engineering and design activities for increased efficiency and quality. Mandatory centers will be used as required by HQUSACE, such as use of the TSMCX for mandatory pavement and transportation systems reviews.

In addition to assistance from the HTRWCTX for certain complex HTRW projects, the CTX provides QA reviews of our "internal" reviews.

8.10 Training

Management will ensure that all team members in ED will be trained to perform their assigned duties, including awareness and implementation, as appropriate, of the ISO 9001 Quality Manual and Engineering Quality Procedures.

8.11 Designer Site Visits and Construction Support

Involvement of professional staff during construction is strongly encouraged for larger or more challenging CW, Military and HTRW projects.

It is preferred that the designer visits the project site prior to the start of budget preparation/fee negotiations for the design. Preferably, this preliminary site visit will occur during the pre-design conference, at which time, a site visit could potentially identify a need for a change in scope. Additional site visits will occur as needed by the designer to ensure a clear understanding of the site conditions and to ensure that the site has not been altered between the time the design begins and the project is advertised for construction.

Designers are encouraged to visit the construction site when necessary. Since site visits can become a costly element, these events are to be scheduled and budgeted by the PM/PE at the beginning of a project. In the case of A-E designs, the PM/PE shall ensure that the appropriate contract requirements are stipulated and negotiated.

ED will review all construction change orders, value engineering proposals, waivers, and system changes for technical applicability as well as for the potential for A-E Liability. The PM/PE shall be involved in these reviews when necessary to ensure that the design intent has not been unknowingly changed. This may require consultation with the design agent. Repetitive deficiencies are to be noted by reviewers and corrected via the Engineering Form 3078 process.

9.0 QMP PREPARATION, REVISION AND ADMINISTRATION

Procedures for QMP preparation, revision, and administration will follow the procedures in ISO 9001 Engineering Quality Procedure (EQP) 05-01, "Procedure for the Preparation and Administration of Procedures," as modified below and the guidelines in the SPD QMP.

Branch/Section Chiefs will ensure that all personnel follow this EQP.

Chief ED-ET&S, or designee, will ensure that up-to-date procedures and a master list of up-to-date EQPs are maintained on the District LAN. The list will include procedure number, title, issue and revision numbers, and dates produced and revised.

Each Branch in ED will be responsible for ensuring that its QMP is followed and maintained up to date for applicability.

To ensure that the requirements in this plan are met, ED will review on a yearly basis, the QMPs for all Branches and discuss them with their respective staff for applicability and compliance.

Annual revisions will be initiated by a message from ED in the month of July to allow revisions to be completed prior to the end of the FY and prior to Command Assistance Visits (CAVs).

9.1 QMP Components and Content

All QMP shall carry the same basic components, as follows:

Purpose - define why the QMP is being created and to specify the objectives.

Scope - define the applicability of the document within the ED Quality System.

References - identify any other documents related to the activity described within the QMP.

Definitions - define words or actions that are not universally understood or that may have a specific interpretation in the QMP.

Policy - identify any policy guidance specific to the individual Branch QMPs.

Quality Management - describe the quality activities involved specific to the individual branch.

Identifies who does what, when, and where, and may describe how and why the activity is carried out.

QMP subheadings shall follow the below format:

Project Initiation and Coordination

Customer Requirements

Technical Requirements

Scope of Work

Schedule

Budget

Designer Selection

Scopes of Services

Quality Plans

QCPs

QAPs

Design Verification

Peer Review/Checking

Senior Staff Overview

Seamless Review

Interdisciplinary Team Coordination

ITR

CTX/MCX Reviews

Certification

BCOE Reviews

VE

Records - used to describe the records created by the use of the QMPs and who is responsible for their identification and maintenance.

If no information applies to a particular component, for example, if there are no References, Definitions, or Records, the word "None" will be inserted.

9.2 Document Control and Distribution

An electronic copy of approved QMPs and revisions shall be sent to each Branch attached to an e-mail.

ED-ET&S shall post QMPs on the Internet and link to the Sacramento District Home Page. ED-ET&S shall also update the master list of QMPs.

10.0 RECORDS

ED will establish and maintain files for each QMP in accordance with EQP 16-04. The files will contain the following:

a. Original hard copy QMPs and revisions.

b. Signed copy of transmittal memorandum.

c. Hard copy of the master list of QMPs.